Summary of Cancer Incidence and Mortality for Zip Code 29651 (Greer, SC)

Cancer Incidence in Zip Code 29651

The first step in the analysis of cancer data for zip code 29651 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29651 from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 735 new cases of cancer occurred in the zip code, while 752 cases were expected. The most common types of cancer were lung, female breast, prostate, and colon/rectum cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed one specific cancer site **(melanoma)** where the number of cases was significantly higher than expected. The main risk factor for melanoma is excessive exposure to ultraviolet radiation from sunlight or tanning booths. Also, having certain types of moles makes a person more likely to develop melanoma. Finally, the risk of melanoma is greater if one or more of a person's first-degree relatives have been diagnosed with melanoma.

Cancer Deaths in Zip Code 29651

To assess cancer deaths in this zip code, cancer mortality data from 1997-2001 were used. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 362 cancer deaths occurred in this zip code, while 355 deaths were expected. Therefore, more cancer deaths occurred than expected; however, this difference was not statistically significant.

The analysis revealed two specific cancer sites **(pancreas and liver)** where the number of cancer deaths was significantly higher than expected. The majority of people with pancreatic cancer are over 60 years old when the cancer is found. Also, men get pancreatic cancer more often than women, and African-Americans are more likely to develop this cancer than white Americans. Pancreatic cancer is higher among smokers, and a diet high in meats and fat increases risk as well. Pancreatic cancer is also more common among people with diabetes.

There are several risk factors that increase a person’s risk for developing liver cancer. These risk factors include chronic infection with Hepatitis B or C or having cirrhosis. Also, occupational exposure to vinyl chloride has been shown to increase liver cancer risk.

Conclusions

To summarize, fewer cancer cases occurred in zip code 29651 than expected. Melanoma was the only cancer type that showed a significant excess. There were more cancer deaths than expected; however, the excess was not statistically significant. In addition, pancreas and liver cancer deaths were significantly elevated. The majority of risk factors associated with these types of cancer are lifestyle related.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or colon/rectum cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer with different risk factors.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of an excess in cancers resulting from environmental exposures in zip code 29651.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

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References:
1. American Cancer Society, www.cancer.org

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29651, 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	133	117.8	1.13	1.95
Breast (Female)	127	111.1	1.14	2.26
Prostate	112	122.0	0.92	0.81
Colon/Rectum	79	87.3	0.91	0.79
Melanoma	**36**	**25.9**	**1.39**	**3.94**
Bladder	27	29.6	0.91	0.23
Non-Hodgkins Lymphoma	20	24.6	0.81	0.87
Pancreas	20	17.0	1.17	0.52
Kidney/Renal Pelvis	19	18.9	1.00	0.00
Uterus	16	18.2	0.88	0.26
Brain/CNS	15	10.2	1.47	2.23
Oral/Pharynx	15	21.6	0.69	2.02
Leukemia	12	14.7	0.82	0.50
Cervix	8	10.4	0.77	0.55
Larynx	8	9.2	0.87	0.17
Esophagus	7	10.3	0.68	1.04
Multiple Myeloma	7	8.5	0.83	0.26
Ovary	7	12.4	0.57	2.34
Liver	5	5.3	0.95	0.02
Thyroid	5	8.0	0.63	1.12
Stomach	3	12.0	0.25	6.77
Unknown/Ill-Defined	25	NA	NA	NA
All Sites	735	752.0	0.98	0.38

Excludes in situ cases of cancer to allow for comparison.
Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant.
If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.
Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
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Table 2. Analysis of Cancer Deaths in Zip Code 29651, 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	110	102.8	1.07	0.51
Colon/Rectum	41	35.5	1.15	0.85
Pancreas	**30**	**19.6**	**1.53**	**5.51**
Breast (Female)	26	26.2	0.99	0.00
Prostate	19	24.2	0.79	1.11
Non-Hodgkins Lymphoma	14	12.9	1.09	0.09
Brain/CNS	12	8.9	1.34	1.05
Liver	**12**	**6.7**	**1.78**	**4.12**
Leukemia	10	12.6	0.79	0.55
Multiple Myeloma	10	8.1	1.23	0.42
Kidney/Renal Pelvis	9	7.2	1.25	0.43
Esophagus	7	8.6	0.81	0.30
Bladder	5	6.8	0.74	0.46
Oral/Pharynx	5	6.8	0.74	0.47
Ovary	4	8.1	0.49	2.11
Stomach	3	9.1	0.33	4.07
Unknown/Ill-Defined	27	NA	NA	NA
All Sites	362	355.2	1.02	0.13

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is significantly different from the expected number of deaths.
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